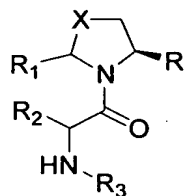


What is Claimed is:

1. A compound of formula (I),



(I),

or pharmaceutically acceptable salt or prodrug thereof, wherein

X is a member selected from the group consisting of CH<sub>2</sub>, CHF and CF<sub>2</sub>;

R is selected from the group consisting of alkylcarbonyl, arylcarbonyl, cyano, heterocyclecarbonyl, R<sub>4</sub>R<sub>5</sub>NC(O)-, B(OR<sub>6</sub>)<sub>2</sub>, (1,2,3)-dioxoborolane and 4,4,5,5-tetramethyl-(1,2,3)-dioxoborolane;

R<sub>1</sub> is selected from the group consisting of alkoxyalkyl, alkyl, alkylcarbonyl, alkenyl, alkynyl, allenyl, arylalkyl, cycloalkyl, cycloalkylalkyl, cyano, haloalkyl, haloalkenyl, heterocyclealkyl, and hydroxyalkyl;

R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of hydrogen, alkoxyalkyl, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heterocycle, heterocyclealkyl, hydroxyalkyl; or

R<sub>2</sub> and R<sub>3</sub> taken together with the atoms to which they are attached form a mono or bicyclic heterocycle selected from the group consisting of 2-indoliny, 2-indolyl, 3-isoquinoline, 2-piperazine, 2-piperidine, 2-pyrrolidine, 2-pyrrole, 2-pyridine, 2-quinoliny, 2-tetrahydroquinoliny, and 3-tetrahydroisoquinoliny, wherein said heterocycle may be substituted with 0, 1, 2 or 3 substituents independently selected from alkenyl, alkoxy, alkoxyalkyl, alkoxycarbonyl, alkoxycarbonylalkyl, alkyl, alkylcarbonyl, alkylcarbonylalkyl, alkylcarbonyloxy, alkylsulfonyl, alkylthio, alkynyl, aryl, arylalkoxy, arylalkyl, arylcarbonyl, aryloxy, carboxy, carboxyalkyl, cyano, cyanoalkyl, formyl, halogen, haloalkyl, hydroxy, hydroxyalkyl, mercapto, nitro, phenyl, R<sub>A</sub>R<sub>B</sub>N-, R<sub>C</sub>R<sub>D</sub>NC(O)-, and R<sub>C</sub>R<sub>D</sub>NS(O)<sub>2</sub>-;

R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are each independently selected from the group consisting of hydrogen, alkyl, and arylalkyl;

R<sub>A</sub> and R<sub>B</sub> are each independently selected from the group consisting of alkyl, alkylcarbonyl, alkoxycarbonyl, alkylsulfonyl; or R<sub>A</sub> and R<sub>B</sub> taken together with the nitrogen to which they are attached form a ring selected from the group consisting of piperidine, piperazine and morpholine; and

R<sub>C</sub> and R<sub>D</sub> are each independently selected from the group consisting of

hydrogen and alkyl.

35

2. The compound according to claim 1, wherein

R is cyano.

3. The compound according to claim 1, wherein

R is cyano; and

R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl.

4. The compound according to claim 1, wherein

R is cyano;

R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl; and

5

R<sub>2</sub> is a member selected from the group consisting of alkoxyalkyl, alkyl, cycloalkyl, cycloalkylalkyl, arylalkyl, and heterocyclealkyl.

5. The compound according to claim 1, wherein

R is cyano;

R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl; and

5

R<sub>2</sub> is a member selected from the group consisting of hydrogen, alkyl, cycloalkyl, and heterocycle; and

R<sub>3</sub> is hydrogen.

6. The compounds according to claim 5, that is a member selected from the group consisting of

(2S,5R)-5-ethynyl-1-L-leucylpyrrolidine-2-carbonitrile;

(2S,5R)-1-((2S)-2-amino-2-cyclopentylethanoyl)-5-ethynylpyrrolidine-2-

5

carbonitrile;

(2S,5R)-1-((2S)-2-amino-2-cyclopentylethanoyl)-5-vinylpyrrolidine-2-

carbonitrile;

(2S,5R)-1-((2S)-2-amino-2-cyclohexylethanoyl)-5-ethynylpyrrolidine-2-

carbonitrile;

10

(2S,5S)-5-ethyl-1-L-leucylpyrrolidine-2-carbonitrile;

(2S,5S)-1-((2S)-2-amino-2-cyclohexylethanoyl)-5-ethylpyrrolidine-2-

- carbonitrile;
- (2*S*,5*S*)-1-*L*-leucyl-5-methylpyrrolidine-2-carbonitrile;
- (2*S*,5*R*)-5-ethynyl-1-*L*-leucylpyrrolidine-2-carbonitrile;
- 15 (2*S*,5*R*)-1-((2*S*)-2-amino-2-cyclopentylethanoyl)-5-ethynylpyrrolidine-2-carbonitrile;
- (2*S*,5*R*)-1-((2*R*)-2-amino-2-cyclohexylethanoyl)-5-ethynylpyrrolidine-2-carbonitrile;
- (2*S*,5*S*)-1-((2*S*)-2-amino-2-cyclopentylethanoyl)-5-methylpyrrolidine-2-
- 20 carbonitrile;
- (2*S*,5*R*)-1-((2*S*)-2-amino-2-cyclopentylethanoyl)-5-prop-1-ynylpyrrolidine-2-carbonitrile;
- (2*S*,5*S*)-4,4-difluoro-5-methyl-1-*L*-valylpyrrolidine-2-carbonitrile;
- (2*S*,5*S*)-4,4-difluoro-1-*L*-leucyl-5-methylpyrrolidine-2-carbonitrile;
- 25 (2*S*,5*R*)-1-((2*S*)-2-amino-2-cyclohexylethanoyl)-5-vinylpyrrolidine-2-carbonitrile;
- (2*S*,5*R*)-1-((2*R*)-2-amino-2-cyclopentylethanoyl)-5-vinylpyrrolidine-2-carbonitrile;
- (2*S*,5*R*)-5-ethynyl-1-(3-methyl-*L*-valyl)pyrrolidine-2-carbonitrile;
- 30 (2*S*,5*R*)-5-ethynyl-1-(3-pyridin-4-yl-*L*-alanyl)pyrrolidine-2-carbonitrile;
- (2*S*,5*R*)-1-*L*-leucyl-5-prop-1-ynylpyrrolidine-2-carbonitrile;
- (2*S*,5*R*)-1-(3-methyl-*L*-valyl)-5-prop-1-ynylpyrrolidine-2-carbonitrile;
- (2*S*,5*S*)-1-*L*-isoleucyl-5-methylpyrrolidine-2-carbonitrile;
- (2*S*,5*S*)-1-(3-cyclopropyl-*L*-alanyl)-5-methylpyrrolidine-2-carbonitrile;
- 35 (2*S*,5*S*)-5-methyl-1-*L*-valylpyrrolidine-2-carbonitrile;
- (2*S*,5*S*)-5-methyl-1-(4-methyl-*L*-leucyl)pyrrolidine-2-carbonitrile;
- (2*S*,5*S*)-1-(3-cyclohexyl-*L*-alanyl)-5-methylpyrrolidine-2-carbonitrile.

7. The compound according to claim 1, wherein

R is cyano;

R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl; and

5 R<sub>2</sub> is hydrogen; and

R<sub>3</sub> is cycloalkyl, wherein cycloalkyl is a member selected from the group consisting of cyclopropyl, cyclobutyl, cyclopentyl, cycloheptyl, and cyclooctyl.

8. The compound according to claim 7, that is a member selected from the group

consisting of

(2*S*,5*R*)-1-*N*-((1*R*,2*R*,4*S*)-bicyclo(2.2.1)hept-2-yl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;

5 (2*S*,5*R*)-1-*N*-((1*R*,4*S*)-bicyclo(2.2.1)hept-2-yl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-(*N*-1-adamantylglycyl)-5-ethynylpyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-(*N*-cyclohexylglycyl)-5-ethynylpyrrolidine-2-carbonitrile;

10 (2*S*,5*R*)-5-ethynyl-1-*N*-(1-(methoxymethyl)cyclopentyl)glycyl}pyrrolidine-2-carbonitrile;

(2*S*,5*R*)-5-ethynyl-1-*N*-((2*S*)-2-hydroxycyclopentyl)glycyl}pyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-(*N*-cyclopentylglycyl)-5-ethynylpyrrolidine-2-carbonitrile;

15 (2*S*,5*R*)-5-ethynyl-1-*N*-(1-(hydroxymethyl)cyclopentyl)glycyl}pyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-*N*-(1-(hydroxymethyl)cyclopentyl)glycyl}-5-prop-1-ynylpyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-(*N*-cyclopentylglycyl)-5-prop-1-ynylpyrrolidine-2-carbonitrile;

(2*S*,5*S*)-1-(*N*-cyclopentylglycyl)-5-methylpyrrolidine-2-carbonitrile;

20 (2*S*,5*S*)-1-*N*-(1-(hydroxymethyl)cyclopentyl)glycyl}-5-methylpyrrolidine-2-carbonitrile;

(2*S*,5*S*)-1-*N*-((2*R*,5*S*)-hexahydro-2,5-methanopentalen-3a(1*H*)-yl)glycyl}-5-methylpyrrolidine-2-carbonitrile;

25 (2*S*,5*R*)-5-ethynyl-1-*N*-(1-(1-hydroxy-1-methylethyl)cyclopentyl)glycyl}pyrrolidine-2-carbonitrile;

(2*S*,5*R*)-5-ethynyl-1-*N*-((2*R*,5*S*)-hexahydro-2,5-methanopentalen-3a(1*H*)-yl)glycyl}pyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-(*N*-cyclopentylglycyl-(*N*-methyl 1-aminocyclopentanecarboxy))-5-ethynylpyrrolidine-2-carbonitrile;

30 (2*S*,5*R*)-1-(*N*-cyclopropylglycyl)-5-ethynylpyrrolidine-2-carbonitrile;

(2*S*,5*R*)-5-ethynyl-1-*N*-((5*R*,7*S*)-3-hydroxy-1-adamantyl)glycyl}pyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-(*N*-cycloheptylglycyl)-5-ethynylpyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-(*N*-cyclobutylglycyl)-5-ethynylpyrrolidine-2-carbonitrile;

35 (2*S*,5*R*)-1-(*N*-cyclobutylglycyl)-5-prop-1-ynylpyrrolidine-2-carbonitrile;

(2*S*,5*R*)-1-*N*-((2*S*)-2-hydroxycyclopentyl)glycyl}-5-prop-1-ynylpyrrolidine-2-carbonitrile;

(2S,5S)-5-methyl-1-{N-((1S,2S,3S,5R)-2,6,6-trimethylbicyclo(3.1.1)hept-3-yl)glycyl}pyrrolidine-2-carbonitrile;

40 (2S,5S)-1-{N-((5R,7S)-3-hydroxy-1-adamantyl)glycyl}-5-methylpyrrolidine-2-carbonitrile;

(1S,3R)-3-({2-[(2S,5R)-2-cyano-5-ethynylpyrrolidin-1-yl]-2-oxoethyl}amino)-N-(pyridin-2-ylmethyl)cyclopentanecarboxamide;

45 (1S,3R)-3-({2-[(2S,5R)-2-cyano-5-ethynylpyrrolidin-1-yl]-2-oxoethyl}amino)-N-quinolin-2-ylcyclopentanecarboxamide; and

methyl (1S,3R)-3-({2-[(2S,5R)-2-cyano-5-ethynylpyrrolidin-1-yl]-2-oxoethyl}amino)cyclopentanecarboxylate.

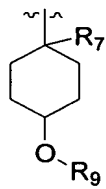
9. The compound according to claim 1, wherein

R is cyano,

R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl; and

5 R<sub>2</sub> is hydrogen; and

R<sub>3</sub> is



R<sub>7</sub> is a member selected from the group consisting of hydrogen and alkyl; and

10 R<sub>9</sub> is a member selected from the group consisting of hydrogen, aryl, and heterocycle.

10. The compound according to claim 9, that is a member selected from the group consisting of

(2S,5R)-5-ethynyl-1-(N-(4-trans-hydroxycyclohexyl)glycyl)pyrrolidine-2-carbonitrile;

5 (2S,5R)-5-ethynyl-1-(N-(4- trans-{(4'-fluoro-5-(trifluoromethyl)-1,1'-biphenyl-2-yl)oxy}cyclohexyl)glycyl)pyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-(N-{4- trans (4-(trifluoromethoxy)phenoxy)cyclohexyl}glycyl)pyrrolidine-2-carbonitrile;

10 (2S,5R)-5-ethynyl-1-(N-(4-hydroxy-1-methylcyclohexyl)glycyl)pyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-{N-(1-methyl-4- trans (pyridin-3-

- yloxy)cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-{4- trans ((5-chloropyridin-3-yl)oxy)cyclohexyl}glycyl)-5-  
 ethynylpyrrolidine-2-carbonitrile;  
 15 (2S,5R)-1-{N-(4- trans (4-cyanophenoxy)cyclohexyl)glycyl}-5-  
 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-(4- trans {(5-(trifluoromethyl)pyridin-2-  
 yl)oxy}cyclohexyl)glycyl)pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-{4- trans (3-pyridin-4-yl-4-  
 20 (trifluoromethyl)phenoxy)cyclohexyl}glycyl)pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-{N-(4- trans (pyridin-2-  
 yloxy)cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-{N-(1-methyl-4- trans (5-cyano-pyridin-2-  
 yloxy)cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 25 (2S,5R)-5-ethynyl-1-{N-(4- trans (pyrimidin-2-  
 yloxy)cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-{N-(4- trans (5-cyano-pyridin-2-  
 yloxy)cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-{4- trans (4-  
 30 (trifluoromethyl)phenoxy)cyclohexyl}glycyl)pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-{4-((5-fluoropyridin-3-yl)oxy)-1-  
 methylcyclohexyl}glycyl)pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-(4- trans (4-carboxy-  
 phenoxy)cyclohexyl)glycyl)pyrrolidine-2-carbonitrile;  
 35 (2S,5R)-5-ethynyl-1-(N-{4- trans (2-(2-oxopyrrolidin-1-yl)-4-  
 (trifluoromethyl)phenoxy)cyclohexyl}glycyl)pyrrolidine-2-carbonitrile;  
 (2S,5R)-1-{N-(4- trans (4-cyano-2-methoxyphenoxy)cyclohexyl)glycyl}-5-  
 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-{4- trans ((5-chloropyridin-2-yl)oxy)cyclohexyl}glycyl)-5-  
 40 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-{N-(1-methyl-4- trans (pyridin-2-  
 yloxy)cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-{4- trans ((5-fluoropyridin-3-  
 yl)oxy)cyclohexyl}glycyl)pyrrolidine-2-carbonitrile;  
 45 (2S,5R)-1-(N-{4- trans ((5-bromopyridin-2-yl)oxy)cyclohexyl}glycyl)-5-  
 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-{N-(4- trans (pyridin-3-

- yloxy)cyclohexyl}glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-prop-1-ynyl-1-(N-{4-(4-
- 50 (trifluoromethyl)phenoxy)cyclohexyl}glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-1-{N-(4- trans (4-cyano-2-fluorophenoxy)cyclohexyl)glycyl}-5-  
 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-{N-(4- trans (3-fluorophenoxy)-1-  
 methylcyclohexyl)glycyl}pyrrolidine-2-carbonitrile;
- 55 (2S,5R)-1-{N-(4- trans (3-cyanophenoxy)cyclohexyl)glycyl}-5-  
 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-(1-methyl-4-{(5-(trifluoromethyl)pyridin-2-  
 yl)oxy}cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-{4- trans ((5-chloropyridin-2-yl)oxy)cyclohexyl}glycyl)-5-
- 60 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-(4- trans {(4'-fluoro-2-(trifluoromethyl)-1,1'-biphenyl-  
 4-yl)oxy}cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-(4- trans {(4'-fluoro-6-(trifluoromethyl)-1,1'-biphenyl-  
 3-yl)oxy}cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;
- 65 (2S,5R)-1-(N-{4-(3-cyano-4- trans  
 (trifluoromethyl)phenoxy)cyclohexyl}glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-{N-(4- trans (3-bromophenoxy)cyclohexyl)glycyl}-5-  
 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-{N-(4- trans (4-cyano-3-fluorophenoxy)cyclohexyl)glycyl}-5-
- 70 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-{4-(2-cyano-4- trans  
 (trifluoromethyl)phenoxy)cyclohexyl}glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-{N-(4- trans (3-cyanophenoxy)-1-methylcyclohexyl)glycyl}-5-  
 ethynylpyrrolidine-2-carbonitrile;
- 75 (2S,5R)-1-{N-(4- trans (4-chlorophenoxy)cyclohexyl)glycyl}-5-  
 ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-(4- trans {(6-methyl-4-(trifluoromethyl)pyridin-2-  
 yl)oxy}cyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-{4- trans (2-cyano-3-
- 80 (trifluoromethyl)phenoxy)cyclohexyl}glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-{4- trans (4-pyridin-4-yl-3-  
 (trifluoromethyl)phenoxy)cyclohexyl}glycyl}pyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-{4- trans (3-cyano-5-

- (trifluoromethyl)phenoxy)cyclohexyl}glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
85 (2S,5R)-5-ethynyl-1-{N-(4-(4-fluorophenoxy)-1-methylcyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
(2S,5R)-5-ethynyl-1-{N-(4-(3-fluorophenoxy)-1-methylcyclohexyl)glycyl}pyrrolidine-2-carbonitrile;  
(2S,5R)-5-ethynyl-1-(N-(1-methyl-4-((5-(trifluoromethyl)pyridin-2-yl)oxy)cyclohexyl)glycyl)pyrrolidine-2-carbonitrile;  
90 (2S,5R)-5-ethynyl-1-(N-{4- trans (3-(trifluoromethyl)phenoxy)cyclohexyl}glycyl)pyrrolidine-2-carbonitrile;  
(2S,5R)-1-(N-{4- trans ((3-bromopyridin-2-yl)oxy)cyclohexyl}glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
95 (2S,5R)-5-ethynyl-1-(N-(4- trans {(4-(trifluoromethyl)pyridin-2-yl)oxy}cyclohexyl)glycyl)pyrrolidine-2-carbonitrile;  
(2S,5R)-1-(N-{4- trans ((5-chloropyridin-2-yl)oxy)-1-methylcyclohexyl}glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
(2S,5R)-1-{N-(4- trans (3-cyanophenoxy)-1-methylcyclohexyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
100 (2S,5R)-5-ethynyl-1-(N-{4- trans (2-carboxy-4-(trifluoromethyl)phenoxy)cyclohexyl}glycyl)pyrrolidine-2-carbonitrile;  
(2S,5R)-1-{N-(4- trans (3-chlorophenoxy)cyclohexyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
105 (2S,5R)-5-ethynyl-1-(N-(1-methyl-4- trans {(5-(trifluoromethyl)pyridin-2-yl)oxy}cyclohexyl)glycyl)pyrrolidine-2-carbonitrile;  
(2S,5R)-1-{N-(4- trans (4-bromophenoxy)cyclohexyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
(2S,5R)-1-(N-(4- trans hydroxycyclohexyl)glycyl)-5-prop-1-ynylpyrrolidine-2-carbonitrile;  
110 (2S,5S)-1-(N-(4- trans hydroxycyclohexyl)glycyl)-5-methylpyrrolidine-2-carbonitrile; and  
6-{[4-((2-[(2S,5R)-2-cyano-5-ethynylpyrrolidin-1-yl]-2-oxoethyl)amino)-4-methylcyclohexyl]oxy}-N,N-dimethylnicotinamide.

11. The compound according to claim 1, wherein

R is cyano;

R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl;



5           R<sub>2</sub> is hydrogen;

          R<sub>3</sub> is alkyl; wherein the alkyl group of R<sub>3</sub> is optionally substituted with a member of the group consisting of alkoxy, alkoxycarbonyl, alkoxycarbonylNR<sub>a</sub>, alkylNR<sub>a</sub>, carboxy, and hydroxy; and

          R<sub>a</sub> is a member selected from the group consisting of hydrogen and alkyl.

12.   The compound according to claim 11, that is selected from the group consisting of

          (2S,5R)-5-ethynyl-1-(N-(1,1,3,3-tetramethylbutyl)glycyl)pyrrolidine-2-carbonitrile;

5           (2S,5R)-1-(N-(tert-butyl)glycyl)-5-ethynylpyrrolidine-2-carbonitrile;

          (2S,5R)-1-(N-(1,1-dimethylpropyl)glycyl)-5-ethynylpyrrolidine-2-carbonitrile;

          (2S,5R)-5-ethynyl-1-{N-(3-(methylamino)propyl)glycyl}pyrrolidine-2-carbonitrile;

10          (2S,5R)-1-(N-(4-*tert*-butoxycarbonylbutyl)glycyl)-5-ethynylpyrrolidine-2-carbonitrile;

          (2S,5R)-5-ethynyl-1-(N-(3-hydroxy-2,2-dimethylpropyl)glycyl)pyrrolidine-2-carbonitrile;

          (2S,5R)-5-ethynyl-1-{N-(3-(N-*tert*-butoxycarbonyl-N-methylamino)propyl)glycyl}pyrrolidine-2-carbonitrile;

15          (2S,5R)-5-ethynyl-1-(N-(4-carboxybutyl)glycyl)pyrrolidine-2-carbonitrile;

          (2S,5R)-5-ethynyl-1-(N-(3-isopropoxypropyl)glycyl)pyrrolidine-2-carbonitrile;

          (2S,5S)-1-(N-isopropylglycyl)-5-methylpyrrolidine-2-carbonitrile;

          (2S,5S)-1-(N-(tert-butyl)glycyl)-5-methylpyrrolidine-2-carbonitrile; and

20          (2R,5S)-1-[(tert-butylamino)acetyl]pyrrolidine-2,5-dicarbonitrile.

13.   The compound according to claim 1, wherein

          R is cyano;

          R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl; and

5           R<sub>2</sub> is hydrogen; and

          R<sub>3</sub> is a member selected from the group consisting of aryl and heterocycle; wherein said heterocycle is a member selected from the group consisting of azetidiny, azepanyl, aziridiny, diazepiny, 1,3-dioxolanyl, dioxanyl, dithianyl, furyl, imidazolyl, imidazolinyl, imidazolidinyl, isothiazolyl, isothiazolinyl, isothiazolidinyl,

10 isoxazolyl, isoxazoliny, isoxazolidiny, morpholiny, oxadiazolyl, oxadiazoliny, oxadiazolidiny, oxazolyl, oxazoliny, oxazolidiny, piperaziny, pyranyl, pyraziny, pyrazolyl, pyrazoliny, pyrazolidiny, pyridiny, pyrimidiny, pyridaziny, pyrroly, pyrroliny, pyrrolidiny, tetrahydrofuranyl, tetrahydrothienyl, tetraziny, tetrazolyl, thiadiazolyl, thiadiazoliny, thiadiazolidiny, thiazolyl, thiazoliny, thiazolidiny, 15 thienyl, thiomorpholiny, 1,1-dioxidothiomorpholiny (thiomorpholine sulfone), thiopyranyl, triaziny, triazolyl, and trithianyl.

14. The compound according to claim 13, that is a member selected from the group consisting of

(2S,5R)-5-ethynyl-1-(N-tetrahydro-2H-pyran-4-ylglycyl)pyrrolidine-2-carbonitrile;

5 (2S,5R)-5-ethynyl-1-(N-tetrahydrofuran-3-ylglycyl)pyrrolidine-2-carbonitrile; and

(2S,5S)-1-(N-2,3-dihydro-1H-inden-1-ylglycyl)-5-methylpyrrolidine-2-carbonitrile.

15. The compound according to claim 1, wherein

R is cyano;

R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl; and

5 R<sub>2</sub> is hydrogen; and

R<sub>3</sub> is a member selected from the group consisting of arylalkyl and heterocyclealkyl.

16. The compound according to claim 15, that is a member selected from the group of

(2S,5R)-5-ethynyl-1-{N-(2-(4-fluorophenyl)-1,1-dimethylethyl)glycyl}pyrrolidine-2-carbonitrile;

5 (2S,5S)-1-{N-(2-(3,4-dimethoxyphenyl)ethyl)glycyl}-5-methylpyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-(N-(tetrahydrofuran-2-ylmethyl)glycyl)pyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-(N-(pyridin-2-ylmethyl)glycyl)pyrrolidine-2-carbonitrile;

10 (2S,5R)-5-ethynyl-1-(N-(2-pyridin-4-ylethyl)glycyl)pyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-{N-((1-tert-butoxycarbonyl)piperidin-4-

yl)methylglycyl}pyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-(N-(4-iodobenzyl)glycyl)pyrrolidine-2-carbonitrile.

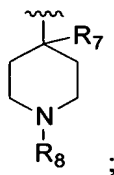
17. The compound according to claim 1, wherein

R is cyano,

R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, and alkynyl;

5 R<sub>2</sub> is hydrogen;

R<sub>3</sub> is



R<sub>7</sub> is a member selected from the group consisting of hydrogen, alkyl and alkoxyalkyl; and

10 R<sub>8</sub> is a member selected from the group consisting of hydrogen, alkylcarbonyl, aryl and heterocycle.

18. The compound according to claim 17, that is a member selected from the group consisting of

(2S,5R)-5-ethynyl-1-(N-(4-methyl-1-pyridin-2-yl)piperidin-4-yl)glycyl}pyrrolidine-2-carbonitrile;

5 (2S,5R)-5-ethynyl-1-(N-(4-methyl-1-(3-cyano-pyridin-2-yl)piperidin-4-yl)glycyl)pyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-(N-(1-(3-cyano-pyridin-3-yl)piperidin-4-yl)glycyl)pyrrolidine-2-carbonitrile;

10 (2S,5R)-5-ethynyl-1-{N-(4-methyl-1-(4-carboxy-pyridin-2-yl)piperidin-4-yl)glycyl}pyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-(N-{4-methyl-1-(5-(trifluoromethyl)pyridin-2-yl)piperidin-4-yl}glycyl)pyrrolidine-2-carbonitrile;

(2S,5R)-1-{N-(1-(5-chloropyridin-2-yl)-4-methylpiperidin-4-yl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;

15 (2S,5R)-5-ethynyl-1-(N-(1-pyridin-2-ylpiperidin-4-yl)glycyl)pyrrolidine-2-carbonitrile;

(2S,5R)-5-ethynyl-1-(N-{4-methyl-1-(4-(trifluoromethyl)pyrimidin-2-yl)piperidin-4-yl}glycyl)pyrrolidine-2-carbonitrile;

- 20 (2*S*,5*R*)-5-ethynyl-1-(*N*-(4-methyl-1-(5-carboxy-pyridin-2-yl)piperidin-4-yl)glycyl)pyrrolidine-2-carbonitrile;  
 (2*S*,5*R*)-5-ethynyl-1-(*N*-(4-methyl-1-(5-cyano-pyridin-3-yl)piperidin-4-yl)glycyl)pyrrolidine-2-carbonitrile;  
 (2*S*,5*R*)-5-ethynyl-1-(*N*-(1-tert-butoxycarbonyl-piperidin-4-yl)glycyl)pyrrolidine-2-carbonitrile;  
 25 (2*S*,5*R*)-5-ethynyl-1-(*N*-(1-5-cyano-pyridin-2-yl)piperidin-4-yl)glycyl)pyrrolidine-2-carbonitrile;  
 (2*S*,5*R*)-1-{*N*-(1-(3-cyanophenyl)-4-methylpiperidin-4-yl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 (2*S*,5*R*)-5-ethynyl-1-(*N*-{4-methyl-1-(4-(trifluoromethyl)pyridin-2-yl)piperidin-4-yl}glycyl)pyrrolidine-2-carbonitrile;  
 30 (2*S*,5*R*)-5-ethynyl-1-(*N*-piperidin-4-ylglycyl)pyrrolidine-2-carbonitrile; and  
 (2*S*,5*R*)-5-ethynyl-1-({[4-methyl-1-(5-nitropyridin-2-yl)piperidin-4-yl]amino}acetyl)pyrrolidine-2-carbonitrile; and  
 (2*S*,5*R*)-5-ethynyl-1-({[4-methyl-1-[5-(methylsulfonyl)pyridin-2-yl]piperidin-4-yl]amino}acetyl)pyrrolidine-2-carbonitrile.  
 35

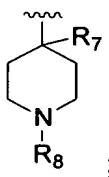
19. The compound according to claim 1, wherein

R is cyano;

R<sub>1</sub> is selected from the group consisting of alkyl, alkenyl, and alkynyl; and

R<sub>2</sub> is hydrogen; and

5 R<sub>3</sub> is



R<sub>7</sub> is a member selected from the group consisting of hydrogen, alkyl and alkoxyalkyl; and

R<sub>8</sub> is a member selected from the group consisting of arylcarbonyl and heterocyclecarbonyl.  
 10

20. The compound according to claim 19, that is a member selected from the group consisting of

(2*S*,5*R*)-5-ethynyl-1-{*N*-(4-methyl-1-(4-methoxycarbonylbenzoyl)piperidin-4-yl)glycyl}pyrrolidine-2-carbonitrile;

- 5 (2S,5R)-1-{N-(1-(4-chlorobenzoyl)piperidin-4-yl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-5-ethynyl-1-(N-(1-isonicotinoyl-4-methylpiperidin-4-yl)glycyl)pyrrolidine-2-carbonitrile;  
 (2S,5R)-1-{N-(1-(4-chlorobenzoyl)-4-methylpiperidin-4-yl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 10 (2S,5R)-1-{N-(1-(4-cyanobenzoyl)-4-methylpiperidin-4-yl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-{N-(1-(4-bromobenzoyl)-4-methylpiperidin-4-yl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile.
21. The compound according to claim 1, wherein  
 R is cyano;  
 R<sub>1</sub> is a member selected from the group consisting of alkyl, alkenyl, alkynyl, allenyl and cycloalkyl; and  
 5 R<sub>2</sub> is hydrogen; and  
 R<sub>3</sub> is a member selected from the group consisting of aryl-O-alkyl-, aryl-NH-alkyl-, heterocycle-O-alkyl- and heterocycle-NH-alkyl-.
22. The compound according to claim 21, that is a member selected from the group consisting of  
 (2S,5R)-1-{N-(1,1-dimethyl-2-(5-cyano-pyridin-2-yloxy)ethyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 5 (2S,5R)-1-{N-(1,1-dimethyl-2-(quinolin-4-ylamino)ethyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-{N-(2-(1,3-benzothiazol-2-ylamino)-1,1-dimethylethyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-{1,1-dimethyl-2-((3-cyano-6-methylpyridin-2-yl)amino)ethyl}glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 10 (2S,5R)-1-(N-(1,1-dimethyl-2-{(5-(trifluoromethyl)pyridin-2-yl)oxy}ethyl)glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-{1,1-dimethyl-2-((3-cyano-6-methylpyridin-2-yl)oxy)ethyl}glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 15 (2S,5R)-1-{N-(1,1-dimethyl-2-(3-cyanopyridin-2-ylamino)ethyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 (2S,5R)-1-(N-(1,1-dimethyl-2-{(4-(trifluoromethyl)pyrimidin-2-

- yl)amino}ethyl)glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 (2*S*,5*R*)-1-*N*-(1,1-dimethyl-2-(5-methoxycarbonylpyridin-2-ylamino)ethyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 20 (2*S*,5*R*)-1-*N*-(2-(2-cyano-5-fluorophenoxy)-1,1-dimethylethyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 (2*S*,5*R*)-1-*N*-(2-((3-chloro-5-(trifluoromethyl)pyridin-2-yl)amino}ethyl)glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 25 (2*S*,5*R*)-1-*N*-(1,1-dimethyl-2-(5-cyano-pyridin-2-ylamino)ethyl)glycyl}-5-ethynylpyrrolidine-2-carbonitrile;  
 (2*S*,5*R*)-1-*N*-(2-(4-carboxy-anilino)-1,1-dimethylethyl)glycyl)-5-ethynylpyrrolidine-2-carbonitrile;  
 (2*S*,5*S*)-5-methyl-1-*N*-(2-(5-cyano-pyridin-2-ylamino)ethyl)glycyl}pyrrolidine-2-carbonitrile.  
 30

23. The compound according to claim 1, wherein

R is cyano;

R<sub>1</sub> is selected from the group consisting of alkyl, alkenyl, and alkynyl; and

5 R<sub>2</sub> and R<sub>3</sub> taken together with the atoms they are attached form a mono or bicyclic heterocycle selected from the group consisting of 3-isoquinoline, 2-pyrrolidinyl, 2-quinolinyl, 2-tetrahydroquinolinyl, and 3-tetrahydroisoquinolinyl.

24. The compound according to claim 23, that is a member selected from the group consisting of

(2*S*,5*R*)-5-ethynyl-1-((3*S*)-1,2,3,4-tetrahydroisoquinolin-3-ylcarbonyl)pyrrolidine-2-carbonitrile;

5 (2*S*,5*S*)-4,4-difluoro-5-methyl-1-((5*S*)-5-methyl-L-prolyl)pyrrolidine-2-carbonitrile; (2*S*,5*S*)-5-methyl-1-((3*S*)-1,2,3,4-tetrahydroisoquinolin-3-ylcarbonyl)pyrrolidine-2-carbonitrile;

(2*S*,5*S*)-5-methyl-1-L-prolylpyrrolidine-2-carbonitrile;

(2*S*,5*S*)-5-methyl-1-((5*S*)-5-methyl-L-prolyl)pyrrolidine-2-carbonitrile.

25. A method of treating diabetes, comprising administration of a therapeutically effective amount of a compound of formula (I).

26. A method of treating type II diabetes, comprising administration of a therapeutically effective amount of a compound of formula (I).

27. A method of treating hyperglycemia, comprising administration of a therapeutically effective amount of a compound of formula (I).
28. A method of treating Syndrome X, comprising administration of a therapeutically effective amount of a compound of formula (I).
29. A method of treating hyperisulinemia, comprising administration of a therapeutically effective amount of a compound of formula (I).
30. A method of treating obesity, comprising administration of a therapeutically effective amount of a compound of formula (I).